Pedro Robles died from AIDS in a Tijuana, Mexico, hospice in 2013 without ever receiving treatment.

No end in sight

By **Jon Cohen**, *in Tijuana, Mexico*

On 6 December 2013, Pedro Robles spent 14 hours in an ambulance being driven up Mexico's Baja California Peninsula. The 51-year-old man was not rushed north for emergency medical care. Time was not of the essence.

Robles had an advanced case of AIDS, and he was being driven 1127 kilometers north from his home in Loreto to Albergue Las Memorias A.C. in Tijuana. A nongovernmental organization (NGO) arranged the trip, because Las Memorias is the only AIDS hospice on the entire Baja California Peninsula, Robles was broke, and Tijuana held out the remote hope that someone there could navigate the medical bureaucracy and maybe save his life. But Las Memorias itself, which also serves as a drug rehabilitation center and is largely run by its residents, has no trained medical staff. And although Las Memorias did what it could to make Robles comfortable, Tijuana ultimately failed him: He died 6 days later without ever having seen a doctor.

As the dream of ending AIDS catches hold in a growing number of locales (see main story, p. 226), Tijuana is hardly anomalous: Many places are still struggling to provide basic treatment and prevention services. Of course, people still die from AIDS in wealthy countries like the United States, which is visible from downtown Tijuana, but appropriate care is so readily available that AIDS hospices shut their doors years ago.

Like Tijuana, too many locales appear to be "running at a standstill" and are saddled by "poor strategy, absence of leadership, or inadequate resources," laments a prominent commission in a report in *The Lancet* last month, "Defeating AIDS–advancing global health."

The drop in HIV infections and AIDS-related deaths worldwide over the past dozen years has been impressive, the report says. But without a "massive and rapid expansion of a comprehensive AIDS response," the global toll—still more than a million new infections and deaths each year—will worsen again over the next 5 years, and the world will fail to reach the United Nations goal of "ending AIDS as a public health threat" by 2030.

Mexico is not particularly hard-hit by HIV. In 2014, UNAIDS estimated the country had 190,000 infected people, which is an adult prevalence of 0.2%—lower than in the United States. The government offers free antiretrovirals (ARVs) and, since

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November 2014, has recommended that all HIV-infected people receive them as soon as diagnosed. "When you look back to what we were doing 10 years ago, we are really, really better," says Carlos Magis-Rodríguez of the National Center for HIV/AIDS Prevention and Control in Mexico City. But he acknowledges that Tijuana and other cities in Mexico are struggling.

Tijuana has what is known as a "micro-hyperepidemic." Overall HIV prevalence in Tijuana is 0.6%—the same as the United States. But the rate is soaring in high-risk groups. In women who sell sex, prevalence jumped from 2% in 2003 to 6% by 2012, according to recent studies by researchers from the University of California, San Diego (UCSD), whose team includes Mexico-based colleagues. Clients of these sex workers had a prevalence of 5%, they found. HIV prevalence is also about 5% in the many people in Tijuana who inject drugs. Preliminary studies of men who have sex with men and transgender people suggest about 20% are infected.

In theory, Tijuana should be able to rein in its concentrated epidemic by taking advantage of recent advances. Key among them is the 2011 demonstration that people who fully suppress their HIV levels with ARVs rarely spread the virus to their sexual partners. But this treatment-as-prevention strategy has not gained much traction in Tijuana. UCSD behavioral health scientist Laramie Smith recently pooled data from six studies of nearly 200 HIV-infected people in Tijuana and found that only about half even knew they had the virus. Tijuana offers free HIV testing through NGOs and government-funded clinics, yet no plan is in place to regularly test high-risk people at venues where they hang out, like gay bars or the red light district.

Those who do learn they're infected rarely get treatment. In Smith's study, only 11% received related medical care, and only 3.66% began taking ARVs. The federally sponsored HIV/AIDS clinic, CAPASITS, provides free ARVs, but it is located far from the downtown area and is difficult for many people to reach. Tijuana is also a hub for migrants, including many deportees from the United States, and some do not have the documents required to receive help at CAPASITS. And the services there fall short of those in developed countries: CAPASITS, for example, must ship patient blood samples to Mexico City for measurements of CD4 lymphocyte counts and HIV levels.

José Luis Burgos, a Tijuana-based clinician who works with the UCSD team, says a key problem is that the patient load in Tijuana outstrips the availability of qualified HIV/AIDS doctors. Burgos contends that Tijuana could train primary care physicians to diagnose and treat HIV/AIDS patients. "You need to demystify HIV care," he says. CAPASITS, he notes, has only three doctors and treats some 1000 patients. "What kind of care can you expect from three providers?"

Paradoxically, Mexico's rising economic status is hampering the fight. A 2011 grant from the Global Fund to Fight AIDS, Tuberculosis and Malaria enabled two Tijuana NGOs to launch mobile needle-exchange units. But the grant ended in 2013 when Mexico achieved upper middle income status and became ineligible for Global Fund support. Tijuana's needle-exchange programs shriveled overnight. "Mexico is supposed to be upper middle income, but the border isn't," Burgos says.

The UCSD team soon documented a 40% increase in needle-sharing among a group of users that it has closely followed. That undermines other efforts to reach people with HIV, says UCSD epidemiologist Steffanie Strathdee, who leads the binational research program with her psychologist husband Thomas Patterson. "The sad thing" is when drug users come in for needle exchange, she says, "they have an opportunity to get HIV testing or a referral to a drug treatment program."

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> **José Luis Burgos**,
> University of California, San Diego

Strathdee hopes the group's extensive research will draw attention to the problems and the opportunities in Tijuana. "It's entirely possible to end the AIDS epidemic in Tijuana," she says. And if Tijuana can do it, so can much of the rest of the world. ■

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by 90-90-90. The city's ending AIDS targets also include reducing new HIV diagnoses from 371 in 2013 to 37 in 2020 and HIV-related deaths from an estimated 91 to eight.

"The biggest challenges are reaching into marginalized populations that are not getting the services they need," says the health department's Buchbinder—transgender people, drug users, African-Americans, and the young. Getting to Zero is massively expanding the use of "navigators" assigned to infected people to help address barriers that interfere with care, such as substance abuse, food insecurity, homelessness, and violence. A new program will better coordinate medical records at different providers to help identify patients who are slipping through the net. And HIV-infected patients deemed at high risk of not taking ARVs will receive extra check-in phone calls and reminders for appointments.

Rigorous evaluation is critical for the campaign to succeed, said Havlir at a coalition meeting in June. Getting to Zero is raising money specifically to track the program's performance, using novel metrics like assessing the impact of PrEP on new infection rates. "This is not just talking, talking, talking," Havlir said. "This is about action."

THE DRIVE TO END AIDS is spreading worldwide, and there is even something of a good-natured race to be first. Washington, D.C., New South Wales in Australia, and Brazil are now in the running as well, and San Francisco has attracted intrigued delegations from Amsterdam, France, and the White House's Office of National AIDS Policy.

From his office at the London School of Hygiene & Tropical Medicine, which he directs, epidemiologist Peter Piot is watching these efforts with interest—and some skepticism. "It's very important that these projects proceed and that we learn from them," says Piot, who chaired the "Defeating AIDS" commission and formerly headed UNAIDS. But he cautions that the intensive efforts in BC, New York state, and San Francisco must continue indefinitely. "These three examples are not North Korean types of islands—there will be constant reintroduction of the virus," he notes.

Ending the global spread of HIV will ultimately take a vaccine, Piot says, stressing that treatment as prevention packs a limited punch. He points to a mathematical model in "Defeating AIDS" that found that even if the world achieves the UNAIDS 90-90-90 goal in 2030, hundreds of thousands of new HIV infections and deaths will still occur each year. "We'll have to see whether these three places can end AIDS as a public health threat," Piot says. "But that doesn't mean one shouldn't try." ■

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